

M.E DEGREE EXAMINATIONS: JUNE 2011

Second Semester

ENERGY ENGINEERING

EEG505: Energy Conservation and Management

Time: Three Hours

Maximum Marks: 100

Answer All the Questions:-

PART A (10 x 2 = 20 Marks)

1. Differentiate commercial and non commercial energy.
2. Name five designated consumers under energy conservation act.
3. Define energy audit.
4. List some key instruments required for energy audit.
5. What are the key elements of energy monitoring and targeting?
6. Define cumulative sum.
7. What do you mean by energy-efficient motors?
8. Define colour rendering index.
9. Name at least three selling points to top management for investing in energy efficiency over other competitive projects.
10. What are performance contracts?

PART B (5 x 16 = 80 Marks)

11. a) Explain the energy reforms in coal, oil, gas and electricity sectors in detail.
(OR)
b) (i) Explain the Indian energy scenario and energy needs of the Indian economy (8)
(ii) Explain the significance of energy conservation (8)
12. a) Explain the types of energy audit with methodology
(OR)
b) Explain in detail the energy conservation measures in steam systems
13. a) Explain the various components of tariff structure in electricity billing
(OR)
b) Explain how a cumulative sum chart is drawn with an example
14. a) (i) List the types of capacitors and explain the performance evaluation of capacitors (8)

(ii) Explain the various losses in transformers (8)

(OR)

b) (i) Explain the methodology of lighting system energy efficiency study (8)

(ii) Explain some good practices in lighting (8)

15. a) What are the various financial analysis techniques available? Explain the simple payback period, its limitations and advantages

(OR)

b) (i) Explain the energy performance contracting and the role of ETCOS in detail. (8)

(ii) Define sensitivity analysis. Explain the micro and macro factors that are considered for the sensitivity analysis (8)
